01-09-06

AF/1764

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

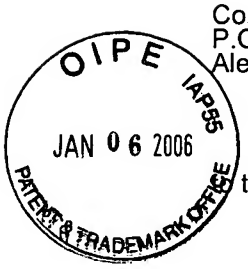
In Re Application of: Carl E. Cupit
§ Atty. File: CUPIT 001

Serial No.:10/045,946

Filed: 01/15/2002

FOR: APPARATUS AND METHOD FOR DETERMINING THE LEVEL IN A COKE DRUM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450



TRANSMITTAL OF APPEAL BRIEF (PATENT APPLICATION-37 CFR 192)

1. Transmitted herewith in triplicate is the APPEAL BRIEF in this application with respect the Notice of Appeal filed on November 9 , 2005.

2. **STATUS OF APPLICANT**

This application is on behalf of
[] other than a small entity
[X] small entity
[] verified statement:
[] attached
[X] already filed

3. [] Applicant hereby petitions for an extension of the shortened period for for filing the Brief from the Notice of Appeal filed _____ as provided in 37 CFR 1.136 (a).

[] A fee in the amount of $_____
[] is enclosed

4. **FEE FOR FILING APPEAL BRIEF**

Pursuant to 37 CFR 1.17(f) the fee for filing the Appeal Brief is:
[X] small entity $250.00
[] other than a small entity $500.00

Appeal Brief fee due $ 250

5. **FEE PAYMENT**

[] Not required (Fee paid in prior appeal.)

[X] Attached is a check in the sum of $250

Respectfully submitted,

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Date: 1/6/06

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of: Carl E. Cupit	§	Atty File: CUPIT 001
Serial No.: 10/045,946	§	Group Art Unit: 1764
Filed: 01/15/2002	§	Alexis A. Wachtel

For: APPARATUS AND METHOD FOR DETERMINING THE LEVEL IN A COKE DRUM

BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS Page

I.
REAL PARTY IN INTEREST

The subject patent application is not assigned. Therefore, the real party in interest is the inventor Carl E. Cupit.

II.
RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to appellants or appellants' legal representative which will directly or indirectly affect or be affected by or have a bearing on the Board's decision in this appeal.

III.
STATUS OF CLAIMS

Claims 1-13 remain in the application. No claims are allowed. It appears that claims 11-13 were not examined. Claims 11-13 were submitted as new claims along with claim 10 in an amendment filed on May 23, 2005.

IV.
STATUS OF AMENDMENTS

All amendments have been entered.

V.
SUMMARY OF THE INVENTION CLAIMED ON APPEAL

The apparatus of the present invention comprises a plurality of linear radiation detectors mounted along the length of the coke drum with a radiation source or sources mounted opposite the detectors. See page 5 lines 10-15. The key to the invention, apparatus and method, is the calibration of the detectors. Because the density of the material in the coke drum is changing as it fills, and because the radiation detected is dependent upon the density of the material through which the radiation passes, there must

be some method of taking this changing density into account. The detectors are initially calibrated such that when the coke drum has hydrocarbon vapors in it, e.g., after the drum has been charged for three or four hours, the radiation count at that time will represent a zero foam level at the detectors. The window on the radioactive source holder is closed such that no radiation is detected by the detector. Each individual detector is then calibrated such that this reading represent 100% for each detector. If there are five equal length detector tubes comprising the entire detector level system each tube at 100% will represent one fifth or 20% of the entire foam level. See page 10 lines 2-9.

After the drum is charged the level detectors are recalibrated to provide the extreme accuracy required to monitor the foam level. Foam rises in the coke drum as the drum is charged and passes the lowest detector which causes the radiation count transmitted from the detector to begin to fall. When the foam passes the top of a lower detector the radiation of the next highest detector will begin to fall. The lower detector will then be recalibrated to indicate 100 per cent level at the radiation count it was reading at the time the radiation count on the next higher detector begins to fall. The remaining detectors are recalibrated accordingly. The radiation count used to reset the 100 per cent level of all the lower detectors is linear and the radiation count determined from that linearity is used to recalibrate the top detector to indicate a 100 per cent level of that detector. See page 10 lines 10-19.

Although each tube has been calibrated to show 100% level when it detects no radiation, the foam at this time may not be dense enough to completely block the radiation and the detector may still be sensing a radiation count. With the foam level completely covering a detector but yet the detector still transmitting a radiation count, the radiation

count of the detector above may begin to fall indicating the foam has actually reached the next level. This resolution is part of the reason for the placement of a plurality of detectors along the length of the drum with some nominal distance between the active sensing area of each detector. The nominal distance may be a few inches to a foot depending upon the desired accuracy. See page 12 lines 1-9.

The number of detector tubes will depend upon the height of the drum and the desired level of accuracy and the vertical height of the drum that is to be monitored.

VI.
GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. The rejection of claims 1-10 as being obvious under 35 USC 103 (a) over US 4,176,052 to Bruce, et al in view of US 5,099,124 to Benson. See the Examiner's Final Rejection Mailed August 8, 2005, in the Appendix,

2. Claims 11-13 appear to not have been examined. However, appellant is proceeding on the grounds that they would have been subject to the same rejection as they contain limitations similar to those in claims 4-6.

VII.
ARGUMENT

A. The Rejection

Claims 1-10 stand rejected under 35 USC 103(a) as being obvious over Bruce, et al, in view of Benson.

Applicants respectfully traverse the rejection.

B. The Prior Art

Bruce et al teach a level system for detecting a coke level in a coke drum comprising :

(a) a plurality of radiation detectors mounted length wise along the height of the coke drum and

(b) a radiation source mounted on the coke drum opposite said radiation detectors.

Benson teaches a level system for detecting the level of a hydrogen containing liquid in a vessel comprising a source of fast neutrons mounted on or in close proximity to the vessel and a detector tube for detecting slow neutrons disposed parallel to the source tube. See Benson column 3 lines 42-58. In operation, as the level of the hydrogen-containing liquid rises above the bottom of the source tube the number of fast neutrons emitted from the source tube and entering the liquid increases sharply. The fast neutrons are slowed or moderated and reflected back or backscattered out of the liquid and impinge on the detector tube as slow neutrons. As the level of the liquid increases further, the number of backscattered neutrons detected by the detector tube increases proportionately. See Benson column 4 lines 25-35. If greater accuracy is desired, once the level is located on an individual detector tube, all other detector tubes may be turned off. See Benson column 5 lines 20-28. The accuracy is improved simply by decreasing the overall length over which the error is attributed (example is 12 inches for one tube versus 60 inches for five tubes). See Benson column 5 lines 28-56.

C. GROUNDS

1. All of the claims, 1-10 are subject to the same rejection – that they are obvious under 35 USC 103 (a) over Bruce et al in view of Benson. Claims 1-3 and 10-13 are drawn to an apparatus while claims 4-9 are drawn to a method. The claims are of varying scope. The claims will be argued and grouped separately as indicated below.

1. The Apparatus

a. Claims 1-3, 7 and 8

Claims 1-3 and are directed to an apparatus for determining the level in a coke drum which comprises several linear radiation detectors mounted along the length of a coke drum with a radiation source(s) mounted opposite the detectors. The radiation detectors are initially calibrated to read one hundred per cent when there no radiation detected. Claims 7 and 8 depend on claim 3 and are considered together with claims 1-3.

The difference between the claimed invention and the combined prior art is the calibration of the radiation sensors. The examiner argues that the calibration is disclosed in Benson at column 5, lines 5-56. See Examiner's Final Rejection at Pages 4 and 5. Applicant disagrees with the examiner's interpretation of the reference. As noted above Benson's detectors indicate an increase in level in response to an increase in radiation (slow neutrons) detected. Thus, if calibrated at all, the detectors of Benson would be calibrated to read one hundred percent at the highest level of radiation, not zero. Benson also points out at column 4 lines 35-43 that the increase in the number of backscattered slow neutrons and the output from the detector tube is almost perfectly linear. The claimed invention is doing the exact opposite of Benson. That is, the level is increasing as the radiation detected falls off to zero. A claimed method that is doing the opposite of the reference is the antithesis of obviousness. See *In re Buehler*, 185 USPQ 781(CCPA 1975). The prior art as a whole must be viewed not merely as a desired piecemeal selection. *In re Kuderna, et al.*, 165 USPQ 575 (CCPA 1970). Moreover, where there is a general teaching and a specific teaching which specific teaching leads away from the invention then the specific teaching must be considered in its entirety. *In re Lundsford,* 148 USPQ 721 (CCPA 1966).

Claims 1-3 cannot be obvious over a reference that disclose an entirely different system of level detection. All that Benson discloses at column 5 lines 5-56 is that the accuracy of the reading may be increased by decreasing the total length over which the detector error is applied. The length is decreased by selectively turning off all of the detector tubes except the one on which the level has been grossly detected. This is not the equivalent of initially calibrating all of the detector tubes to read one hundred per cent when no radiation is detected as in claim 1.

b. Claims 10 and 12

Claims 10 and 12 are directed to an apparatus wherein after initial calibration to one hundred per cent when no radiation is detected, the detectors are further calibrated to read zero per cent when the coke drum is filled with vapors. Neither Bruce, et al or Benson teach this calibration. As noted above the detectors of Benson would have to be calibrated just the opposite since an increase in level gives an increase in radiation. Applicant points out that no calibration at all is disclosed in Benson.

c. Claims 11 and 13

Claims 11 and 13 are directed to an apparatus wherein the radiation detectors are recalibrated to read one hundred per cent using the radiation count of the next lower tube at the time it begins to detect a level. . Again, neither Bruce, et al nor Benson teach radiation detectors which are calibrated in this manner. This final recalibration of the claim accounts for any change in density of the foam at varying heights in the drum and gives a continuing accurate level position. The switching on/off of the detector tubes in Benson does not recalibrate the tube based upon the radiation reading of the next lower tube. The switching off of the tubes simply removes their length from the accuracy calculation. Thus

the claims 11 and 13 are not obvious over Bruce and Benson.

2.The Method

a. Claim 4

Claim 4 is directed to a method of measuring the level in a coke drum utilizing the apparatus of claims 1 and 10. That is linear radiation detectors are placed along the length of a coke drum with radiation sources opposite. The detectors are initially calibrated to read one hundred per cent when no radiation is detected and then calibrated to read zero per cent when the drum is filled with hydrocarbon vapors.

Since Benson does not teach the same method of measuring the level his detectors cannot be calibrated as claimed. As noted above, the radiation count of Benson increases as the level increases. This is just the opposite of the claimed invention.

b. Claim 5

Claim 5 is directed to the method of claim 4 wherein each radiation detector is recalibrated to one hundred per cent when the radiation count of the next higher detector begins to fall.

Benson does not recalibrate his detectors simply leaves on only the one where the level has been grossly detected. This increases the accuracy by removing their length from the error calculation. Thus claim 5 is not obvious over Bruce and Benson.

c. Claim 6

Claim 6 is directed to the method of claim 4 wherein each radiation detector except the top one is calibrated like claim 5 and the top is calibrated by a linear interpolation of all of the lower recalibration.

This is a special claim for recalibrating the topmost detector and is only applicable

to applicants invention.

d. Claim 9

Claim 9 is a method directed generally to detecting a boiling mass in the coke drum and then taking into account the changing densities of the foam over the height of the drum.

The crux of the present invention is succinctly presented in claim 9. The inventor has postulated his own theory of what is happening inside a coke drum and has designed a system to account for his assumptions. The detector of Bruce is to detect the actual coke level in the drum which assumes a solid mass. The claimed invention detects the foam level. Benson is specifically designed to detect a liquid level and does not contemplate a change of density in the vessel. In particular, Benson discloses that the number of backscattered neutrons corresponds linearly with an increase in level. See column 4 lines 35-43. However, in the instant invention (and in a coke drum) the radiation count detected is dependent upon the density of the material. A detector may be reading less than 100% as previously calibrated when the next higher detector begins to detect a level. See specification at page 12 lines 1-9. It is the constant recalibration of the present invention which takes into account the changing density.

The main difference between the claimed invention and the prior art is the calibration of the radiation detectors. In Benson an increase in radiation indicates an increase in level, while in the instant invention a decrease in radiation indicates an increase in level. While the turning on and off of the individual detectors of Benson helps to improve the accuracy of the reading it is in no wise a calibration.

As noted above Benson does not disclose the claimed calibrations of any of the

claims. Because the operation of the detectors of Benson are opposite that of the claimed invention he cannot disclose or make obvious the claimed calibrations of any of the claims.

D. Conclusion

The application of 35 USC §103 to the issue of patentability has been considered by the Supreme Court of the United States in *Graham v. John Deere*, 383 US 1, 148 USPQ 459 (US SupCt 1966). The Supreme Court held that 35 USC §103 requires a three-pronged inquiry. It is necessary to:

(i) determine the knowledge disclosed in the prior art;

(ii) determine the differences between the teaching of the prior art and the claims at issue; and

(iii) resolve the differences between the teaching of the prior art and the claims in question on the level of the ordinary skill in the art field.

The differences between the cited prior art and the claimed invention are such that the only conclusion that can be drawn is that the cited references do not disclose the claimed elements and cannot make them obvious.

Applicants respectfully request that the board reverse the examiner.

Respectfully Submitted,

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Date 1/6/06

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as overnight mail in an envelope addressed to:

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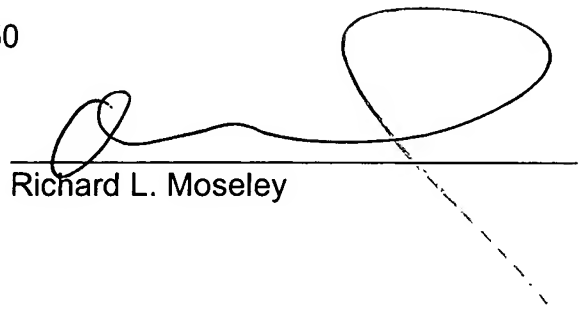
on 1/6/06.



Richard L. Moseley

APPENDIX
VIII.
CLAIMS ON APPEAL

1. A level system for detecting a foam level in a delayed coking drum comprising:

(a) a plurality of linear radiation detectors mounted length wise along the height of the coke drum;

(b) a radiation source mounted on the coke drum opposite said radiation detectors;

(c) each of said radiation detectors being calibrated to read one hundred per cent level when no radiation is detected.

2. The level system according to claim 1 wherein each of said radiation detectors is spaced apart a nominal distance along the height of said drum.

3. The level system according to claim 1 wherein each of said radiation detectors is placed end to end along the height of said drum.

4. A method of detecting a foam level in a delayed coking drum comprising:

(a) placing a plurality of linear radiation detectors along the height of said drum;

(b) placing a radiation source on said drum opposite said radiation detectors;

(c) calibrating each of said radiation detectors to read zero per cent level at the radiation count of the detector when only hydrocarbon vapors are present in the drum adjacent to the detectors;

(d) calibrating the output each of said radiation detectors to read one hundred per cent when no radiation is detected;

(e) detecting radiation as a percentage of the height of each radiation detector as radiation is blocked by the foam level rising in the coke drum;

(f) multiplying the percentage reading for each detector by the fraction of height each

detector is in relation to the total height of all the detectors to give a product; and

(f) summing all of the resulting products to give a foam level.

5. The method according to claim 3 wherein the output of each detector is recalibrated after feed is started to read 100 per cent when the radiation count of the next higher detector begins to fall.

6. The method according to claim 4 wherein the output of all except the topmost of the radiation detectors are recalibrated after feed is started to read 100 per cent when the radiation count of the next higher detector begins to fall and output of the topmost detector output is recalibrated based upon a linear interpolation of the lower recalibrations.

7. The method according to claim 3 wherein the radiation count of each detector is indicated in a distributive control system.

8. The method according to claim 3 wherein the radiation count of each detector is indicated in a computer.

9. A method of detecting a foam level in a delayed coking drum comprising detecting the boiling mass in the coke drum and accounting for the changing densities of the foam in the drum over the height of the coke drum.

10. The system according to claim 2 wherein each radiation detector is calibrated at zero when the coke drum is filled with hydrocarbon vapors.

11. The system according to claim 10 wherein each successive radiation detector from the bottom is recalibrated to 100% when it begins to detect a level using the radiation count of the next lower radiation detector at that time.

12. The system according to claim 3 wherein each radiation detector is calibrated at zero when the coke drum is filled with hydrocarbon vapors.

13. The system according to claim 12 wherein each successive radiation detector from the bottom is recalibrated to 100% when it begins to detect a level

IX.

EVIDENCE APPENDICES

A. U.S. Patent 4,176,052

B. U.S. Patent 5,099,124

C. Examiner's Final Rejection Mailed August 8, 2004

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,946	01/15/2002	Carl E. Cupit	CUPIT001	2439

7590 08/10/2005

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EXAMINER	
WACHTEL, ALEXIS A	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.	Applicant(s)	
10/045,946	CUPIT, CARL E.	
Examiner	**Art Unit**	
Alexis Wachtel	1764	

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D: 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Response to Amendment

1. Applicant's amendment, affidavit and accompanying remarks filed 5-23-05 have been entered and carefully considered.

The amendment and affidavit are sufficient to overcome the anticipation rejections of claims 1-9. The affidavit has been found to be persuasive and has overcome the 112 2nd paragraph rejections of claims 4-9. Claim 10 was added for consideration. However, an updated search yielded new prior art that provides a new basis of rejection as shown below. Applicant's arguments are rendered moot in vie of the new grounds of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,176,052 to Bruce et al in view of US 5,099,124 to Benson.

With respect to claim 1, Bruce et al teach a level system for detecting a foam level in a delayed coking drum comprising:

(a) a plurality of radiation detectors mounted length wise along the height of the coke drum (Col 9, lines 9-19);

(b) a radiation source mounted on the coke drum opposite said radiation detectors (Col 8, lines 31-40);

Bruce et al do not teach the use of linear radiation detectors or that said linear radiation detectors are calibrated to read one hundred per cent level when no radiation is detected. Benson et al is directed to level detection means and teaches the use of radiation source tube (20) that can be placed opposite of a linear radiation detector array (22) (Col 6, lines 9-36) and whereby a plurality of such linear detectors can be used (Fig.1, items 22a-e). Said linear detectors are useful for measuring levels of a hydrogen containing substance (Col 1, lines 7-12). Said linear detectors are connected by to an electronic console (26a) by high voltage leads (24a-e). Electronic console supplies high voltage to linear detectors (22a-e) and processes signals from detector tubes into a voltage or current proportional to the count rate produced in each detector tube in response to slow neutrons detected in each of detector tubes. When all detector tubes (22a-e) are functioning and outputs from each are summed by electronic console (26a), stacked detector tubes function as one detector tube. By providing a means of selectively and independently switching detector tubes off and on, much greater precision and accuracy can be achieved (Col 5, lines 5-27). In view of this teaching it would have been obvious to one of ordinary skill to have replaced the level detection scheme taught by Bruce et al with the level detection system taught by Benson. One of ordinary skill would have been motivated by the desire to provide more accurate level detection means inside a coke drum.

With respect to claims 2,3 and 10, the art combination of Bruce et al and Benson renders obvious the claimed radiation detector configuration along the height of a coke drum end to end as well as their operation charecteristics.

With respect to claim 4, the combination of Bruce et al and Benson as set forth above teach a method of detecting a foam level in a delayed coking drum comprising:

(a) placing a plurality of linear radiation detectors along the height of said drum;

(b) placing a radiation source on said drum opposite said radiation detectors',

(c) calibrating each of said radiation detectors to read zero per cent level at the radiation count of the detector when only hydrocarbon vapors are present in the drum adjacent to the detectors (Benson, Col 5, lines 5-56);

(d) calibrating the output each of said radiation detectors to read one hundred per cent when no radiation is detected (Benson, Col 5, lines 5-56);

(e) detecting radiation as a percentage of the height of each radiation detector as radiation is blocked by the foam level rising in the coke drum (Benson, Col 5, lines 5-56);

(f) multiplying the percentage reading for each detector by the fraction of height each detector is in relation to the total height of all the detectors to give a product (Benson, Col 5, lines 5-56); and

(g) summing all of the resulting products to give a foam level (Benson, Col 5, lines 5-56).

With respect to claim 5. wherein the output of each detector is recalibrated after feed is started to read 100 per cent when the radiation count of the next higher detector begins to fall (Benson, Col 5, lines 5-56).

With respect to claim 6, wherein the output of all except the topmost of the radiation detectors are recalibrated after feed is started to read 100 per cent when the radiation count of the next higher detector begins to fall and output of the topmost detector output is recalibrated based upon a linear interpolation of the lower recalibrations (Benson, Col 5, lines 5-56).

With respect to claim 7, wherein the radiation count of each detector is indicated in a distributive control system (Benson, 26a).

With respect to claim 8, wherein the radiation count of each detector is indicated in a computer (Benson, Fig.6). Examiner notes that plot of Fig.6 inherently results from a computer processing detector data, therefore, a computer is inherently indicated on a computer.

With respect to claim 9, the art combination of Bruce et al and Benson as set forth above would inherently be capable of detecting a foam level in a delayed coking drum comprising detecting the boiling mass in the coke drum and accounting for the changing densities of the foam in the drum over the height of the coke drum.

Prior Art of Record

4. The prior art of record and not relied upon is considered pertinent to Applicant's disclosure. In addition, the following references are cited for disclosing various aspects of Applicant's invention:

US 4,755,677; US 3,501,632; US 4,727,247; US 4,884,457; US 5,132,917; US 5,127,772; US 5,028,311; US 5,667,669; US 4,344,819

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Glenn Caldarola
Supervisory Patent Examiner
Art Unit 1764

Notice of References Cited	Application/Control No. 10/045,946	Applicant(s)/Patent Under Reexamination CUPIT, CARL E.	
	Examiner Alexis Wachtel	Art Unit 1764	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,099,124	03-1992	Benson, Royal H.	250/357.1
	B	US-			
	C	US-			
	D	US-			
	E	US-			
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FOREIGN PATENT DOCUMENTS

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	N					
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RELATED PROCEEDINGS

1.NONE